PATHOLOGY.

173. Sur les modifications histologiques des cellules nerveuses dans l'état de fatigue. (The Histological Modifications in Nerve Cells during Fatigue). A. M. Pugnat (La France Méd., 44th year, p. 745).

The studies of different authorities on the modifications that nerve cells undergo, in different stages of fatigue, have yielded contradictory results up to the present time, and the author enumerates his observations of histological changes in the spinal ganglia of young cats, which are best adapted to experimentations and the preparations of nerve fibres, to which the electrodes are applied. These latter are placed at a distance of three or four ctms. from the ganglion, in order to avoid any mechanical irritations by the electrical current, and it is generated by a Leclanché cell with induction coil. The manifestations of fatigue observed in nerve cells are a diminution of the cellular volume and its nucleus, and disappearance of the protoplasmatic chromatine substance. As the stimulation is kept up the chromatine granules become less visible by degrees, disappearing to a great extent at the end of about sixteen minutes, when they are seen only in the periphery of the cell in an annular arrangement. When the stage of exhaustion is reached—about twenty-four minutes of stimulation—the chromatine granules are entirely absent in the cytoplasm, which latter takes on a pale uniform tone, the nerve cell contracting in a manner as not to fill its reticulum completely, and the nucleus diminishing in size, with indistinct outlines. Other changes found in the nucleus, or its emigration towards the periphery of the cell, described by others, are not confirmed by the author. In regard to the two principal factors concerned in the experimental fatigue of nerve cells, viz: the intensity and duration of stimulation, the former is of paramount importance, it proving that a strong current, acting but a short time, causes much more marked cellular changes than a weaker one of longer duration.

Macalester.

174. Rückenmarksbefunde bei Gehirntumoren (Findings in the Spinal Cord in Cases of Brain Tumor). Josef Ursin (Deutsche Zeitschrift für Nervenheilkunde, 11, 1897, p. 169).

Ursin reports three cases of brain tumor with changes in the posterior columns of the spinal cord. In two of these the degeneration was of an ascending type, and due to involvement of the posterior roots, but in the third it was evidently primary, for the posterior roots were degenerated at their entrance into the cord only in the upper part of the cervical region. Changes in the ganglion cells of the cord were noted in all three cases, but only in one was the extraspinal portion of the posterior roots altered. Meningeal involvement was not observed in any of the cases.

Two views are held regarding the alteration of the posterior columns in cases of brain tumor: (1) the degeneration results from increased pressure of the cerebrospinal fluid (Mayer), and (2) that the degeneration occurring in cases of malignant growths is analogous to what is seen in the peripheral nerves in such conditions (Dinkler).

If Mayer's view were correct, the degeneration of the posterior roots would be greatest where the pressure is greatest, i. e., in the lower parts of the spinal cord, but in a number of cases the degeneration has been found to be most intense in the cervical region, and in others no signs of increased intracranial pressure have been noted, or where these signs have been present the degeneration of the posterior roots has been comparatively slight. Mayer's view also does not explain the greater involvement of the roots of one side of the cord. In reply to Mayer's statement that if the toxic theory were correct, the extraspinal portion of the posterior roots would be the first to suffer, inasmuch as this part is surrounded by the cerebrospinal fluid, but that actually in cases of brain tumor this portion of the roots is relatively intact, Ursin refers to the well-known cases of toxic degeneration of the posterior roots as seen in pellagra, ergotism, diabetes, etc., in which the extraspinal portion of the posterior roots was not degenerated, and which resemble in this respect the cases of brain tumor.

Ursin believes that the lesions in the spinal cord in cases of brain tumor may be an intramedullary, primary degeneration of the posterior columns, changes in the ganglion cells, and changes in the remaining white matter, and in addition to these lesions the extramedullary portion of the posterior roots may be affected. The cause is to be found in intoxication and malnutrition. SPILLER.

175. DETAILED REPORT UPON THE CLINICAL AND PATHOLOGICAL FEATURES OF SIX CASES WHICH CAME TO AUTOPSY. A. N. Ohlmacher (Bulletin of the Ohio Hospital for Epileptics, January, 1898, p. 4).

Six cases of epilepsy are here reported upon with more than usual attention to details; they form the basis of a second paper of the author, "Upon the Resemblance of the Foregoing Cases of Epilepsy to Certain Diseases Associated with Thymic Hyperplasia," p. 43, in which the author discusses:

1. Thymic asthma.
2. Sudden death in adults with persistent thymus.
3. Exophthalmic Goitre.

The author shows that in four of the cases of epilepsy there was a marked increase of the thymus, and he further adds that while four cases do not form a basis for weighty conclusions, still, when these four cases are of a disease in which the morbid anatomy has always been dark; in which a constant gross lesion in even four consecutive cases has been almost unknown; and in which, unfortunately, attention has been almost exclusively centred upon the brain,—then the discovery of a uniformly characteristic condition, outside of the brain, even in four cases, carries with it a hopeful suggestion. Further, when it happens that the peculiar morbid anatomy fits in with several other conditions in which certain clinical analogies can be shown, and particularly when these conditions are almost as mysterious as epilepsy, then it seems justifiable to direct careful attention to the various relations suggested by the study.

"One thing must be certain, and that is, that somewhere, somehow the peculiar morphological anomalies found in our few cases of epilepsy and also noted in thymic asthma, thymic sudden death and possibly Basedow's disease, will be found to have more than mere accidental bearing, for assuredly it is not nature's habit to leave behind in a certain unfortunate class of human beings a series of morbid anatomical conditions, such as those we have considered, without some weighty purpose behind her." JELLIFFE.

176. BACTERIOLOGIE DE DEUX CAS DE CHORÉE AVEC ENDOCARDITE (Bacteriology of two Cases of Chorea with Endocarditis). M. Apert (La Med. Moderne, 8, 1898, p. 89).

M. Apert, Soc. de Biologie, in two cases of chorea with endocarditis observed in the service of M. Dieulafoy, made cultures from the blood in milk, by the procedure suggested by Thiroloix. In the first case, in which the chorea was already disappearing, the cultures re-